

WHAT IS CLAIMED IS:

1. A method for improving the luminescent efficiency of semiconductor nanocrystals which comprises surface-treating the semiconductor nanocrystals with a reducing agent.
2. The method of claim 1, wherein the semiconductor nanocrystals are synthesized by a wet chemistry method.
3. The method according to claim 1, wherein the semiconductor nanocrystals are core-shell, alloy or gradient structures made of at least one material selected from the group consisting of CdS, CdSe, CdTe, ZnS, ZnSe, ZnTe, HgS, HgSe, HgTe, GaN, GaP, GaAs, InP and InAs.
4. The method according to claim 1, wherein the reducing agent is a hydride ion-generating salt, an organic reducing agent, a reducing gas or a solution containing the gas such as sodium borohydride, lithium borohydride, lithium aluminum hydride, hydrazine, hydrogen gas, hydrogen sulfide or ammonia.
5. The method according to claim 1, wherein the surface of the nanocrystals is reduced or oxidized to a state where the nanocrystals are coordinated by an organic dispersant and dispersing the nanocrystals in a solvent having an affinity with the dispersant.

6. The method according to claim 4, wherein the dispersant is at least one compound selected from the group consisting of C₂₋₁₈ alkylcarboxylic acids, C₂₋₁₈ alkenylcarboxylic acids, C₂₋₁₈ alkylsulfonic acids, C₂₋₁₈ alkenylsulfonic acids, C₂₋₁₈ phosphonic acids, C₂₋₁₈ alkylamines, C₂₋₁₈ alkenylamines and the salts thereof.

7. The method according to claim 5, wherein the dispersant is at least one compound selected from the group consisting of oleic acid, stearic acid, palmitic acid, hexylphosphonic acid, n-octylphosphonic acid, tetradecylphosphonic acid, octadecylphosphonic acid, n-octyl amine and hexadecyl amine.

8. The method according to claim 1, wherein the nanocrystals and the reducing agent are mixed in a weight ratio of 1:10~10:1.

9. The method according to claim 1, wherein the surface treatment of the nanocrystals is carried out in the range of 0~100°C.

10. The method according to claim 1, wherein the surface treatment of the nanocrystals is carried out for 1 second to 2 days.

11. The method according to claim 1, wherein the nanocrystals have a shape or mixed shape of a sphere, a rod, a tripod, a tetrapod, a cube, a box or a star.

12. The method according to claim 1, wherein the nanocrystals have sizes of 1~50nm.

13. A semiconductor nanocrystal prepared by the method of claim 1.

14. An organic electroluminescent device comprising a plurality of organic and inorganic layers including a luminescent layer, wherein the luminescent layer comprises the semiconductor nanocrystals of claim 12.

15. A semiconductor nanocrystal having a chemically reduced or oxidized surface.